

What is claimed is:

1. A method of measuring contact resistance of a probe,  
including:

bringing a plurality of probes including first and second  
5 probes into contact with a plurality of electrode pads that  
are disposed on a semiconductor device to be electrically tested  
and connected each other with a conductive wiring;

connecting a power supply to at least one predetermined  
first probe of the plurality of probes and supplying a current  
10 or a voltage from the first probe through the electrode pads  
and the wiring to the second probe to the semiconductor device;

measuring contact resistance between the electrode pad  
and the probe based on the current or the voltage supplied to  
the semiconductor device;

15 judging whether the measured contact resistance is equal  
to or more than a predetermined value or not; and

when the contact resistance is equal to or more than the  
predetermined value, cleansing the plurality of probes.

2. A method of measuring contact resistance of a probe  
20 as set forth in claim 1, further including:

prior to the measuring the contact resistance, setting  
the predetermined value in accordance with an operating voltage  
of the semiconductor device.

3. A method of measuring contact resistance of a probe  
25 as set forth in claim 1, further including:

prior to the measuring the contact resistance, setting the current or the voltage supplied from the power supply to the first probe in accordance with an operating voltage of the semiconductor device.

5           4. A method of measuring contact resistance of a probe as set forth in claim 1, further including:

disposing the semiconductor device, prior to the measuring the contact resistance, on a supporting area in a prober that has the supporting area that supports the  
10 semiconductor device and a cleaning area that cleanses the probe;

wherein the cleaning is performed in the cleaning area of the prober.

5. A method of testing a semiconductor device, including:

bringing a plurality of probes including a first and second  
15 probes into contact with a plurality of electrode pads that is disposed on a semiconductor device and connected each other with a conductive wiring;

connecting a first power supply to at least one predetermined first probe of the plurality of probes and  
20 supplying a current or a voltage from the first probe through the electrode pads and the wiring to the second probe to the semiconductor device;

measuring contact resistance between the electrode pad and the probe based on the current or the voltage supplied to  
25 the semiconductor device; and

judging whether the measured contact resistance is equal to or more than a predetermined value or not, and, when the contact resistance is less than the predetermined value, carrying out an electrical test of the semiconductor device.

5           6. A method of testing a semiconductor device as set forth in claim 5, wherein when the semiconductor device is subjected to an electrical test, a second power supply that supplies a source potential is connected to each of the first probe and the second probe, the source potential is supplied  
10 from the first probe and the second probe to the electrode pad, and thereby the test is carried out.

7. A method of testing a semiconductor device as set forth in claim 5, wherein when the semiconductor device is subjected to an electrical test, the first probe is connected  
15 to a second power supply that supplies a source potential, the second probe is non-connected to the second power supply, thereby the source potential is supplied from the first probe to the electrode pad, and thereby the test is carried out.

8. A method of testing a semiconductor device as set  
20 forth in claim 6, wherein the first power supply and the second power supply are the same power supply.

9. A method of testing a semiconductor device as set forth in claim, wherein when the semiconductor device is subjected to an electrical test, a third power supply that  
25 supplies a ground potential is connected to each of the first

probe and the second probe, thereby the ground potential is supplied from the first probe and the second probe to the electrode pad, and thereby the test is carried out.

10. A method of testing a semiconductor device as set  
5 forth in claim 5, wherein when the semiconductor device is subjected to an electrical test, the second probe is connected to a third power supply that supplies a ground potential; the first probe is non-connected to the third power supply; the ground potential is supplied from the second probe to the  
10 electrode pad; and thereby the test is performed.

11. A method of testing a semiconductor device as set forth in claim 5, further including:

cleaning the plurality of probes when the measured contact resistance is judged to be equal to or more than a predetermined  
15 value; and

carrying out an electrical test of the semiconductor device with the cleansed probes.

12. A method of testing a semiconductor device as set forth in claim 11, further including:

20 prior to bringing the probe into contact, disposing the semiconductor device on a supporting area in a prober having the supporting area that supports the semiconductor device and a cleaning area that cleanses the probe;

wherein the testing and the cleaning are carried out in  
25 a same prober.

13. A method of testing a semiconductor device as set forth in claim 5, wherein the measuring the contact resistance is performed after a plurality of semiconductor devices are subjected to an electrical test.